

# Islands: Palaeontology, Geology and Tectonics

S.K. Donovan

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Island biotas have been a great influence on evolutionary theory. One of Darwin's key field areas was the Galapagos Islands and theories of island biogeography invoke evolution by isolation. But the importance of the geological side of the natural history of islands is too often trivialised. Many islands and island chains, such as the Antilles, Iceland, southeast Asia and New Zealand, furnish key evidence for plate tectonic processes, providing subaerial expressions of suites of rocks that are otherwise limited to the marine realm. Their long histories of tectonism are demonstrated by their stratigraphic record. The rock records of oceanic islands are dominated by igneous rocks and limestones which together contribute to an unusual suite of natural environments. And the fossil biotas of islands provide evidence of generally widespread marine taxa contrasted with unusual terrestrial biotas brought together by chance biogeographic processes, influenced by the barriers of geology, tectonics and physiography.

The intention of this Lyell Meeting is to bring together tectonicists, geologists, palaeontologists and geomorphologists to discuss the intersection of their specialisms in the geology of islands. It is envisaged that talks will be grouped under three broad themes. *Evolution of Islands* will examine the principal processes of island formation, both tectonic and igneous, and the evolution of island landforms. The rock record of an island may be exotic, composed of suites of rocks that are rare in continental settings. *Marine Faunas of Ancient Islands* will explore the geological attributes that influence their distribution, such as plate tectonic processes and physiographic expression. Islands are small, but have proportionally long coastlines, so they have unusual potential for forming isolated refuges for marine organisms both now and in the past. *Walking on Islands* will examine the terrestrial environment, and the geological and evolutionary processes that produce the unique features of island biotas. Geological processes and biological isolation have led to the evolution of bizarre taxa including giant flightless birds and rats, and dwarf humans.